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Information Concerning the History of K-1070-B
Classified Burial Ground

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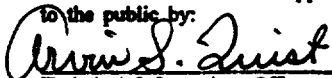
**INFORMATION CONCERNING THE HISTORY OF K-1070-B
CLASSIFIED BURIAL GROUND**

**Compiled by
S. G. Thornton
Environmental Management Division
OAK RIDGE K-25 SITE
for the Health Studies Agreement**

April 18, 1995

**Oak Ridge K-25 Site
Oak Ridge, Tennessee 37831-7101
managed by MARTIN MARIETTA ENERGY SYSTEMS, INC.
for the U.S. DEPARTMENT OF ENERGY
under Contract DE-AC05-84OR21400**

**This document has been approved for release
to the public by:**


Technical Information Officer
Oak Ridge K-25 Site

7/19/95
Date

My conclusions from more than 30 interviews conducted on the history and use of subject burial ground are as follows.

The K-1070 B Old Classified Burial Ground was opened in the early 1950s when the amount of classified equipment, material, and parts reached a level that made warehouse storage impractical. This period saw the expansion of ORGDP with the addition of K-31 and K-33 and the beginning of construction of the Paducah Plant and soon after the Portsmouth Plant. Major improvement in barrier, compressor, and coolant systems resulted in plant improvement programs generating large quantities of obsolete classified machinery, equipment material, and parts that had to be disposed.

In the 1940s and probably running into the early 1950s each of the three plants, K-25, Y-12, and X-10, had their own dumping ground in an area near the "Y" intersection of State Route (SR) 95 and SR 58. Equipment, machinery, parts, and scrap from the demolition of the S-50 Plant at the old K-25 Power House, equipment stripped from the K-1131 Feed Plant for modifications and improvements, equipment and scrap from stripping K-25, K-27, and K-29 diffusion stages and coolant systems for improvements were hauled and dumped in the K-25 area near the SR 95/58 intersection. This dump was cleaned up in the mid-1960s, and many trailer and truck loads of "junk" were hauled to the K-25 Plant and buried in K-1070 B. In the cleanup a significant

effort was made to remove radioactively contaminated materials as well as classified material back into burial inside the plant. No mention was made of liquid hydrocarbons being found and returned to the K-1070 B from this area.

The K-1070 B Old Classified Burial Ground was ^{closed in 1976 or 1977,} probably ~~closed~~ in mid-1976 when the newly expanded K-1070 C/D classified burial ground was placed in operation.

From my interviews and conversations about the K-1070 B Old Classified Burial Ground, the following would necessarily be a partial list of equipment and material in this area.

Stage gas coolers

Barrier plant manufacturing machinery, equipment, parts

Compressor parts, rotors, stators blades, seals

Barrier equipment supplied from Decatur, IL, and Buffalo, NY.

K-1301 Old Nitrogen Plant demolition scrap

Barrier tube sheets, bundle assemblies, ferrules, tube sheets

Forklifts

Converter shell parts

Valves and valve parts.

Uranium, uranium fluorides, oxy-fluorides, tetrafluorides which would have assays of depleted, normal, and probably slightly enriched

Steel drums which had contained classified material.

Aluminum, copper, beryllium, monel, lead

Cast iron, steel, stainless steel, nickel-plated steel

Bronze and brass

Plastic, glass, wood, concrete

Laboratory scrap such as vent ducts, hoods, etc., removed in alterations remodeling, etc.

Classified papers and documents

Large quantities of Steam Plant ashes

Finished centrifuge rotor material - 360,000 ft³

Centrifuge rotor raw material - 15,000 gal

Scrap metal (50% Al, 50% steel) - 375,000 lb

Excavations - earth and rock for cover

From my interviews, I believe that burials of liquid organics-hydrocarbon oils, solvents, etc., were minimal in K-1070 B.

Aided by recent pictures, drawings, old pictures, and knowledge of the early days at the K-25 Plant, Joe Dykstra feels he can walk the area defining the perimeter of the K-1070 B burial ground from which an estimate of the burial volume can be made.

History of K-1070 B Classified Burial Ground

<u>Contact</u>	<u>Information</u>	<u>Suggested Other Contacts</u>
Alice Lay ORGDP Environ. 4-7672	Alice interviewed Felix Calhoun, retired K-25 Roads and Grounds in 1984; burials included drums, HF/KF electrolytic sludge, radioactive fluorination ash (probably from feed plant which had been stored in vault). No opening or close date.	Mitchell/Perry/ Long/Stair
Ted Koprowski	No recall.	Hank Culbert
Hank Culbert retired K-25 Oper. Toll Coord. 483-7102	No recall.	Hank Stoner 483-5053 John Blair 588-9809 Alice Lay
Hank Stoner retired Y-12 formerly K-25 Barrier Plant	During his tenure at Barrier Plant 1940s - 1958 Hank does not remember any obsolete equipment being buried.	John Franzerb Rt. 1, Box 268 Kingston Al Varlon 588-7774 Jeff Bostock PCDP Manager
Frank Strang 483-2536	No recall - was in cascade during most of period.	Shift supts, John Blair and Joe Dykstra
Mitchell/Perry/ Long/Stair Environmental X-10	Recall stories but not dates of opening or closure.	
Jim Dalton K-25 Power & Shift Op. 4-3003	Closed in early 1970s; disposed of steam plant ash in fill in this burial.	Hugo Hughes Roads and Grounds, K-25, 4-8361

<u>Contact</u>	<u>Information</u>	<u>Suggested Other Contacts</u>
Hugo Hughes 4-8361	Closed in mid-1970s. Some centrifuge scrap was buried here in addition to barrier equipment, tube sheets, and possibly seals.	HE (B) Williams Retired Roads and Ground, K-25, 483-7389. Dan Wilkins, Y-12, formerly K-25 Roads and Grounds, 4-1934
Ben Teague Shift Supt K-25, retired 483-6800	When questioned on K-1070 B Old Class Burial, Ben jumped on "hot" area detected in fly-over by plane or helicopter, RAW put Ben in charge; removed 100 loads dirt to X-10 to bring to acceptable level; RAW said remove to 0 level and 50 more loads removed. Ben said the K-1405 people threw hot stuff "over the bank." This was not part of burial ground but was east and south of it. Ben remembered that some barrier tube sheets, ferrules, obsolete equipment was buried in K-1070 B. Area was closed in '73 or '74 per Ben.	
Stan Stief Hd of Environmental Group, K-25 retired about 1980 - now with DOE, 4-1181	No recall	
Red Northcutt Retired 1985 Shift Supt 482-2122	When working in coded chemicals in early 1970s, recalled scrap from laboratory remodeling was dumped in K-1070 B - probably contaminated hoods, vent piping, etc.	

Contact

Information

Suggested
Other Contacts

Norm Rathbone No recall
Retired Shift
Supt, 482-2610

Bob Paine No recall
Retired Shift
Supt, 588-8682

Joe Dykstra

John Pashley No recall
Op Anal &
Planning, 4-9997

H. E. Williams Brand new drums containing
Retired Roads and classified material were
Grounds, 483-7389 emptied and buried here;
old tube sheets from
cascade and from storage in
salvage on peninsula were
even moved to this burial.
Remembers large units of
class. documents, paper
buried here before
shredding and burning were
employed; remembers being
called out at night because
daily (end of day) coverage
did not secure it. Thinks
yard was opened in 1960s.
(Junk was taken to a
salvage yard at junction of
SR 95/58 in the 1950s where
there is now a gate.)
Spoil dirt from around
plant and steam plant ashes
were used to level.
Remembers contractor
digging footings for K-1066
B cycl. yard (east of Toll
Facility, K-1423) got into
some class material causing
"flap" because he and his
crew were uncleared.

ContactInformationSuggested
Other Contacts

Dan Wilkins
Y-12, 4-1934
formerly Roads and
Grounds supt K-25

A major item for burial was centrifuge rotor material and scrap; also scrap shipped back to K-25 from AiResearch. Centrifuge material included metal scrap. Bob Cable sent large quantities of

which was dumped into excavated holes and then covered. Also scrap from K-1401.

On volume or quantity, Dan says there was at least one dump/day on five day/week basis. Material would be gathered in Dempster Dumpster at facility for routine pickup. Burials were covered every day. There were no logs and no reports.

K-1070 B was closed in late 1976 or early 1977 when it was reportedly filled up. New classified burial ground was opened "on hill" in early 1977. Dan pegs these times on his memory of returning to Y-12 in September 1977.

Roy Quarles
Retired K-25
Supv included
Roads and Grounds
Harriman/Rockwood
8-615-882-3640

Remembered Barrier Plant machinery and equipment were buried here; also equipment from K-130; No plant was buried (?). Recalled a winter flood that washed out some "stuff" - caused a fish kill and resulted in installing a retaining wall or dam (possible confused on location).

<u>Contact</u>	<u>Information</u>	<u>Suggested Other Contacts</u>
Gene Rooks K-25 Communications 4-9775, formerly Imp Prog Eng under Trotter and Maintenance Supervisor	Gene left Barrier Plant in 1962 and went to Maintenance. Before leaving, he recommended discarding large piece of classified obsolete equipment which may have been buried in K-1070 B later. Gene went to PEM/CUP program in Engineering in 1972.	John Jones John Blair Shirley Gilliam
John Jones Y-12 Engineering formerly as Imp Prog manager under Trotter, 4-9782	Came on board in PSF/PEM/CUP in 1973. No recall on opening burial ground. Recommended talking to engineers on PSF, process engineer Don Kellogg and F&M Jim Bradshaw on PSF funding.	Bob Hutchins and Hugh Beeson (PSF Eng), Don Kellogg, Oper and Eng Jim Bradshaw, F&M
Bob Hutchins Eng on PSF 6-4008	No recall	
Shirley Gilliam Troy Trotter's secretary, 4-9797	Shirley Gilliam references the following PSF/PEM/CUP cost reports which are now located in K-1001 B wing near mail room. KBD-697 PSF Completion report from beginning to end and contains narrative. KBD-1071 PEM Completion report. KBD-1170 CUP Completion Report. Also PSF/PEM/CUP reports can be found in K-1034 indexed to location in row and box no.	

ContactInformationSuggested
Other Contacts

Joe Dykstra
X-1000
Many years - Coded
Chemicals, Chem
Op., Engineering
483-9502

Remembered with certainty that K-1070 B was opened to receive old Barrier Plant equipment and machinery that had become obsolete. This was done in late 1960s in preparation for Barrier Plant expansion and installation of new equipment and machinery for upcoming PEM/CUP. This part of program was called Production Support Facility (PSF). Tube sheets and converter shells were also buried in K-1070 B.

Shirley Gilliam

Joe remembers burials at 20-ft depths.

Maintenance did all removal of equipment and machinery because of classification. Thinks start time for this work could be obtained from cost records. (But burial ground could have been opened earlier.)

Joe feels he could walk area with surveyor and identify boundaries which could be flagged, area estimated and, using an aerial burial photo, could obtain a burial cubic yard volume.

Joe places opening of K-1070 B as 1969-1970 period when the rush hit to clean out the old Barrier Plant and to expand for the "big program." (This opening date came into conflict with subsequent information.)

ContactInformationSuggested
Other Contacts

John Blair
retired Asst to
Barrier Plant
Manager
588-9809

Old equipment from Buffalo, NY, and Decatur, IL, stored in vaults and later buried. After Nixon election came big push and old obsolete equipment was removed from Barrier Plant that would have been buried in K-1070 B. (This does not define start of K-1070 B.)

Frank Anderson

John was adamant on the point that there were classified burials directly north of the bottom of K-25; i.e., K-303-8, -9, and -10 beyond (north) K-1025 A, K-1025 B, K-1025 C, and K-1025 B; this puts burials under the K-1066 J cylinder storage yard. (See J. O. Dodson's comments on this.)

Frank Anderson
Security K-25
690-1654

No significant recall.

ContactInformationSuggested
Other Contacts

J. O. Dodson
K-1423 (Toll
Facility) Supt.,
retired, lives
Athens, TN
8-615-745-4729

J. O. Dodson felt this burial area was open throughout the 1960s; that the area was actually opened and classified burials began in the late 1950s or early 1960s. J. O. remembers burying drums that held barrier that he processed in 1962-1964. J. O. also said there were no burials directly north of the bottom of the K-25 building. He said all sorts of scrap and salvage material were stored above ground where the K-1066 S cylinder yard is now located.

Bob Jordan
X-1000, ORGDP
Plant Supt
(1960s to 1972)

Bob Jordan remembers visiting K-1070 B classified burial with Dixie Walker possibly in 1965-66 (Walker retired at the end of 1967) and described it as a messy area needing attention.

<u>Contact</u>	<u>Information</u>	<u>Suggested Other Contacts</u>
Willard Brock 457-9322 retired Material Supv Stores, K-25	Willard came to K-25 Stores in 1964 and was assigned to clean-up of the yard at the "Y," i.e., the intersection of 95/58 where all three plants discard a complete range of junk. He remembers that K-25 and Y-12 finished cleaning out their areas about end of 1967 and the area was seeded. Willard remembers 10 tractor trailer loads hauled out to the K-1070 B class burial ground. Trash included barrier, ferrules, seal parts, hot (radioactively) green/yellow compound, rotors, stators, lots of aluminum, contaminated SMD SMMD valves. Witherspoon Junk Company of Knoxville was contractor for doing hauling. Spoke of X-10 storage as hot area and being warned to stay away; stated plutonium was the "bad actor."	Jim Anderson retired Stores K-25 Kingston 376-9465 Vern Jones Sugar Grove Valley Road
Don Kellogg retired K-25 Process Eng in Op Div and Eng Div	Remembers obsolete Barrier Plant equipment being buried in K-1070 B in early 1970s. No recall of later	
Fred Wright retired K-25 Roads and Grounds	Added nothing new to history. Began as supervisor in Roads and Grounds in 1972. Said closure of K-1070 B was in late 1970s.	

ContactInformationSuggested
Other Contacts

Jim Poston
K-25 Roads and
Grounds
4-8361

Jim came to Roads and Grounds in 1973. He remembers burials in K-1070 B to include concrete, lots of ashes, compressor sections, rotors, glass, spoil dirt from all over the plant. Jim concurs that K-1070 B was closed in late 1976 early 1977. Covered site with dirt, smoothed, contoured, fertilized, and sowed - including locust trees.

Vern Jones
retired K-25 Roads
and Grounds, Res:
Oliver Springs
435-7174

Not much recall. No date on hire-in. Could not recall specific burial items saying "everything was buried there." Did not remember any oils or liquids being dumped in K-1070 B.

<u>Contact</u>	<u>Information</u>	<u>Suggested Other Contacts</u>
<p>Jimmy Parsons retired, Manhattan Project, K-25 Operations Div Mngr, Engineering Div, 457-3927</p>	<p>Jimmy places opening of K-1070 B in early 1950s. Residues from barrier manufacturing from 1947 into early 1950s were probably stored. The expansion program, with construction of K-31 and K-33, the beginning of construction of the Paducah Plant in 1951 followed by construction of the Portsmouth Plant would have led to the need for a classified burial ground in the early 1950s. Jimmy remembers material and equipment (piping, stage parts, coolant system, etc.) being hauled from stripped out of K-25 and K- 29 in the late 1940s down to the K-25 storage yard at State Route 95/58 intersection. In addition equipment scrap and material from the demolition of the S-50 plant at the old K-25 Power House and from modification to the K-1131 Feed Plant were also hauled to the 95/58 "Y."</p>	

ContactInformationSuggested
Other Contacts

Jimmy Parsons
(continued)

Jimmy also remembers the clean-up of the "Y" area and the return of all types of equipment and material to the K-1070 B burial ground inside the plant. He does not recall oils or organics being dumped in the K-1070 burial ground during that period. (Parsons recalled that organics were burned in a pit, part of an old fire station, located near the present K-25 overlook in period 1944-1948.)

Jim Anderson
retired K-25
Stores
Kingston
8-615-376-9465

Jim came to K-25 in 1956 and remembers that the K-1070 B was open as a burial ground at that time. He remembers contaminated stage equipment items from the cascade improvement program in the late 1950s early 1960s being buried there. He remembers barrier parts, clips and ferrules, stored behind the garage being dumped in the K-1070 B burial ground; also old machinery furnace parts, cradles, etc., being disposed of at the beginning of the 1970s. He could not pin the year of closure. He did not remember liquids - oils, organics being dumped there.

<u>Contact</u>	<u>Information</u>	<u>Suggested Other Contacts</u>
P. D. Harris retired Roads and Grounds, came to K-25 in 1945, retired in 1983, Sweetwater 8-615-337-5876	Memory of burials in K-1070 B began in the 1960s. Recalls large amounts of machinery, equipment, scrap, forklifts hauled out by Maintenance and Rust all in preparation for "remodeling" in late 1960s and early 1970s for the PSF/PEM/CUP programs. On question as to any oils, organics, liquids, P. D. replied in negative. But it reminded him that significant quantities of operations were hauled to K-1070 B for burial; P. D. estimated 5 to 10 tons of	Wolfenbarger 482-5404
"Wolf" Wolfenbarger, retired Roads and Ground, 1945 to 1983 482-5404	Main recall was K-1037 equipment and scrap and lots of barrels - drums. Practice was to smash or flatten drums by running over them with a bulldozer. Remembers no oils or liquids.	
Bill McWhorter K-25 Centrifuge 6-0291	Remembers scrap material from AiResearch in California being shipped out-up failed rotors, laboratory scrap, classified parts. Remembers almost every truck out to AiResearch came back with scrap.	Walt Wendelkowski Ed Babley Don Timwell, 6-0404

Contact

Don Tidwell
Property
Disposition, ETAC,
K-25, 6-0404

Information

Don Tidwell came to the K-25 Centrifuge Development program in 1968. He noted that there was classified scrap production from the beginning of the program in 1958. As the program grew with the advent of the CTF, a classified scrap trailer and two classified Dempster Dumpsters were set up to accumulate scrap for burial. Don estimated the amount of scrap generated from CTF operations and then stated that 15% should be added for ETF operation and 10% should be added for the earlier development program going back to 1958. The quantities below include this 25% addition for the ETF and earlier development program; the return of AiResearch scrap is also included in these figures.

Finished Rotor Material -
360,000 ft³; Rotor Raw
Material - 15,000 gal;
Scrap Metal (50% steel, 50%
Al) - 375,000 lb.

Suggested
Other Contacts

Suggested
Other Contacts

Contact

Information

Don Tidwell
(continued)

Don noted that a few wrecks occurred with equipment operating on UF₆ and so there was a small amount of slightly contaminated scrap would have been buried. He also guessed that 10 wrecks may have been sent to scrap containing dampers, each made from about 15 lb of depleted uranium - for a total of 150 lb depleted uranium. Oil discarded with wrecked machines would have been insignificant - a total of no more than 5 gal.

Mike Mitchell
(6-8006)/
Tommy Bowers
(4-8224)/
Dan Wilkins
(4-1934) follow-up

Mike Mitchell referred me to Tommy Bowers for an environmental report that might date the closure of K-1070 B. This report, Study of Low Level Radioactive Solid Waste Disposal and Storage Areas at the ORGDP, K-TL 661, issued 4/22/77, placed the new K-1070 C/D burial ground being built in 1975 and being expanded in 1976. Another call to Dan Wilkins led to the conclusion that K-1070 B was permanently closed in mid-1976 when the new K-1070 C/D was placed in operation.